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Notice of Allowability	Application No.	Applicant(s)	
	10/622,000	JONKER ET AL.	
	Examiner	Art Unit	
	Edward Raymond	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Letter filed 7/16/03.
2. ☒ The allowed claim(s) is/are 1-84.
3. ☒ The drawings filed on 16 July 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>20030716</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20050414</u> 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|--|---|

DETAILED ACTION

Allowable Subject Matter

1. **Claims 1-84** are allowed.
2. The following is an examiner's statement of reasons for allowance: Haferd teaches an electricity-billing meter having unique A/D conversion system. Hartman teaches an electric utility revenue meter polycarbonate base.

The prior art of record does not teach a detector coupled with the memory and operative to compute a plurality of rolling voltages from the stored digital samples over an interval and to compare each of the plurality of rolling voltages to a threshold and indicate a sag/swell event when the rolling voltage deviates from the threshold.

The prior art of record does not teach a bus arbiter responsive to the first and second processors and coupled with the first and second data busses, the bus arbiter operative to isolate the first data bus from the second data bus under normal operating conditions; and the bus arbiter further operative to couple the first data bus to the second data bus and perform a data transfer between the first memory and the second memory.

The prior art of record does not teach a second sensor coupled with the electric circuit and operative to sense the current in the electric circuit and generate a second analog signal indicative of the current; an analog to digital converter coupled with the first and second sensors and operative to convert the first and second analog signals to one or more digital samples; a memory coupled with the analog to digital converter and operative to receive and store the digital samples; and a calculator coupled with the

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memory and operative to compute one or more harmonic frequencies of the voltage and the current from the stored digital samples.

The prior art does not teach a revenue meter for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, the meter comprising a drawout chassis coupled with the meter and operable to fit within a switchboard enclosure; a seal connected between the meter and operative to prevent removal of the meter and indicate tampering with the meter; a first sensor coupled with the electric circuit and operative to sense the voltage in the electric circuit and generate a first analog signal indicative of the voltage; a second sensor coupled with the electric circuit and operative to sense the current in the electric circuit and generate a second analog signal indicative of the current; and a calculator coupled with the memory and operative to compute one or more harmonic frequencies of the voltage and the current from the stored digital samples.

The prior art of record also does not teach a revenue meter for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, the meter comprising a processor coupled with the memory and operative to compute one or more fundamental voltage vectors from the magnitude and phase angle of the fundamental frequency of each of the voltage and the current and further operative to compute the zero, positive and negative sequence voltages by performing a vector addition of the one or more fundamental voltage vectors.

The prior art of record of sensing the voltages in each of the at least one phase and generating analog signals indicative thereof; converting the analog signals to one or

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more digital samples at a rate of at least 64 samples per cycle; storing the digital samples in a memory; computing one or more fundamental voltage vectors from the magnitude and angle of the fundamental frequency of each of the sensed voltages from the stored digital samples', and performing a vector addition of the one or more fundamental voltage vectors to compute the zero sequence voltage.

The prior art of record also does not teach a revenue meter for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, the electric circuit providing a switchboard revenue meter including a draw-out chassis coupled with the meter and operative to fit within a switchboard enclosure, terminals disposed on the chassis for engaging matching terminals within the enclosure, a meter cover operative to enclose the meter and the display within the enclosure and a seal connected with the meter cover and operative to prevent removal of the meter cover and indicate tampering with the meter; sensing the voltages in each of the at least one phase and generating analog signals indicative thereof; converting the analog signals to one or more digital samples at a rate of at least 64 samples per cycle; storing the digital samples in a memory; computing one or more fundamental voltage vectors from the magnitude and angle of the fundamental frequency of each of the sensed voltages from the stored digital samples; and performing a vector addition of the one or more fundamental voltage vectors to compute the zero sequence voltage.

The prior art of record also does not teach a revenue meter for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, the meter comprising a first memory coupled with the analog to digital converter

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and operative to receive and store the one or more digital samples; a second memory coupled with the first memory; a power quality event detector coupled with the analog to digital converter and operative to detect a power quality event and generate a trigger signal; a holdoff timer coupled with the detector and operative to receive, delay and re-transmit the trigger signal; and a memory preservation mechanism coupled with the first memory, the second memory and the holdoff timer and operative to preserve the contents of the first memory using the second memory upon receipt of the trigger signal from the holdoff timer.

The prior art of record does not teach a first power supply coupled with the electric circuit and operative to provide power to the meter from the electric circuit under normal operating conditions; and a second power supply operative to provide power to the meter when a power quality event occurs on the electric circuit, the second power supply including: at least one first capacitor coupled with the electric circuit and operative to store electrical energy from the electric circuit; and at least one second capacitor coupled with the at least one first capacitor and the meter and operative to store electrical energy from the electric circuit; the first and second capacitors further operative to provide the energy to the meter when the power quality event occurs.

The prior art of record does not teach a switching regulator coupled with the electric circuit and the meter and operative to convert the high voltage electrical energy to low voltage electrical energy; and a power supply coupled between the electric circuit and the switching regulator and operative to store the high voltage electrical energy and provide power to the meter when a power quality event occurs on the electric circuit.

The prior art of record does not teach a rectification circuit coupled with the electric circuit and operative to receive AC electric energy from the electric circuit and convert the AC electric energy to high voltage DC electric energy; a charge control circuit coupled with the rectification circuit; a first energy store coupled with the charge control circuit and operative to receive and store the high voltage DC electric energy from the rectification circuit at a rate controlled by the charge control circuit, the first energy store further operative to provide the stored high voltage DC electric energy to the meter when a power quality event occurs on the electric circuit; and a switching regulator coupled with the rectification circuit and the first energy store, the switching regulator operative to receive the high voltage DC electric energy from the rectification circuit and the first energy store, the switching regulator further operative to convert the high voltage DC electric energy to low voltage DC electric energy and provide the low voltage DC electric energy to the meter.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

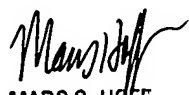
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Raymond whose telephone number is 571-272-2221. The examiner can normally be reached on Monday through alternating Friday between 8:00 AM and 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-2221 for regular communications and 571-272-1562 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

April 18, 2005
Edward Raymond
Patent Examiner
Art Unit 2857


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800